User manual

Cross-folding wheelchairs / English

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This manual is valid from november 2004 and replaces the previously published manual.

Art nr: 74140D 04-11-08

1 GENERAL

In order to avoid damage or injury when using Twin, it is important that the manual is read thoroughly.

△ is a warning triangle used when special care should be taken.

(!) gives advice and tips.

Anti-tip is available as an accessory. Installed correctly it will prevent the chair from tipping over backwards. We recommend that all chairs have one fitted unless the user is highly experienced and has absolute control over the chair.

Twin is an allround wheelchair in tended for both indoor and outdoor use. It is fully tested in accordance with ISO standard 7176. The tests are conducted by the Handicap Institute of Sweden, Tüv in Tyskland and Tno of Holland.

Testing

Etac wheelchairs are tested in accordance with ISO 7176-19 and 10542. These ISO standards specify requirements for the design of the wheelchair restraint points and describe how the wheelchair and user are secured in the vehicle, as well as describing how testing should be carried out and how the test results should be interpreted. Etac wheelchairs are crash-tested by the Swedish National Testing and Research Institute.

The tests were carried out with the wheelchairs in their standard configurations (see manual for respective wheelchair) together with a restraining device, UNWIN_WWR/ATF/K/R, and a three-point seat belt, UNWIN_WWR/HD/ATF/K/R.

The cross-folding wheelchairs, Cross, Twin and Transit, were fitted with securement points.

The following wheelchairs passed the tests in accordance with ISO 7176:19 and ISO 10542: Cross (Ser.No. 18C), Twin (Ser.No. 24A), Transit (Ser.No. 26B)

Seat width: From 35 cm to 50 cm.
Seat depth: 42 cm. Functional seat depth 47-48 cm.
Max user weight: 125 kg

Twin is delivered with wheels ready mounted.

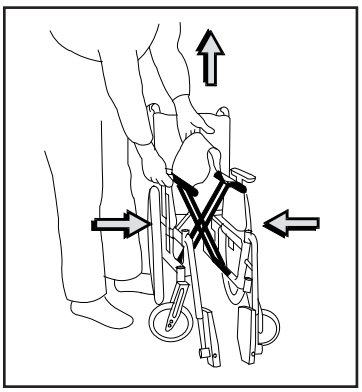
Lifetime: The wheelchair meets fully the demands and specifications of: prEN 12183.
Etac calculates that this test is equal to 5-6 years normal use of the wheelchair.
This means that we judge the normal lifetime of a manual wheelchair to be five years of normal use by one and the same user. The lifetime of the wheelchair is dependant above all on the type of handicap that the user has, and on the proper degree of maintenance. This means that different users may experience both a shorter and longer wheelchair-lifetime then the above-mentioned.

Twin	**Twin låg**
Rear seat height: 46 cm Front seat height: 47 cm Backrest height: adjustable between 40,42,5 and 45 cm. Fixed hubs. Alternative quick-release.	Rear seat height: 41 cm Front seat height: 42 cm Backrest height: adjustable between 40,42,5 and 45 cm. Fixed hubs. Alternative quick-release.

Toolkit contains:
5 Allen keys: 6, 5, 5, 4 och 3 mm
3 spanners: 13, 10 och 8 mm
1 socket wrench
1 Phillips screwdriver

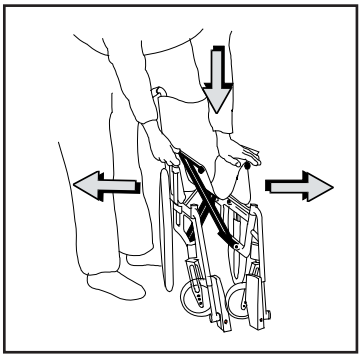
2 HANDLING/TRANSPORT

2: 1 Folding



- If a bow-handle or cross brace is mounted they should be removed
- Flip up the foot rests
- Lift the seat upwards; see illustration

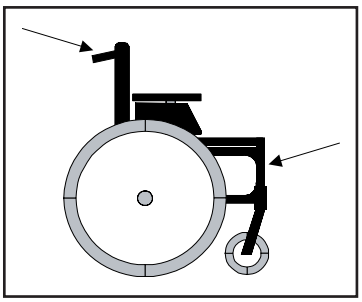
2:2 Unfolding



- Push down on one side of the seat frame using the whole of the flat of the hand; see illustration

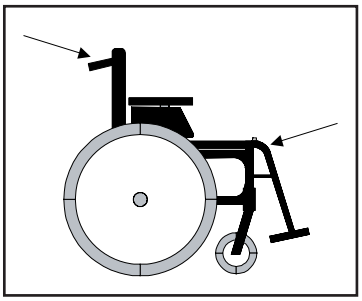
△ Do not hold the seat frame while unfolding as there is a risk of pinching your fingers

2:3 Lifting the wheelchair



Wheelchair without lockable legrests:

- Flip up the footrests and swing the legrests in under the seat, or remove them completely.
- Lift by the push-handles and the front frame by the legrest mounting point.

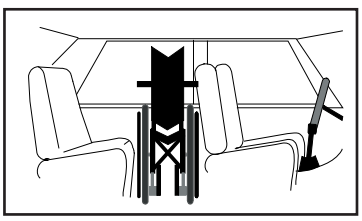


Wheelchair with lockable legrests:

- Lift by the push handles and the leg rests.

△ Before lifting ensure that height adjustable push handles are fully fastened.

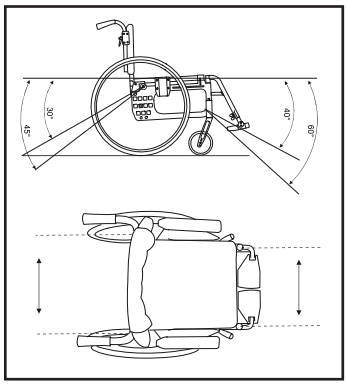
2:4 Car transport.



Private car/taxi : The wheelchair should be placed in the car boot. If this is not possible ensure that the wheelchair is placed in the back seat in such a way that it cannot roll or overturn. If possible the wheelchair should be secured using a safety-belt.

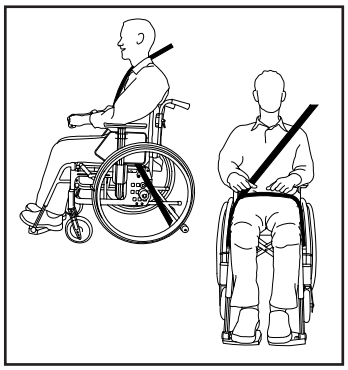
2 HANDLING/TRANSPORT

2:5 Securing



The wheelchair must be secured as follows. The straps must not run through the wheels or around the seat back tubes.

2:6 Seat belt



If the wheelchair is used as a seat for travelling in the vehicle Etac recommends that the user wears the three-point seat belt that is fitted to the vehicle. It is important that the three-point seat belt is fitted correctly, as shown in the drawings:

2:7 Recommendations

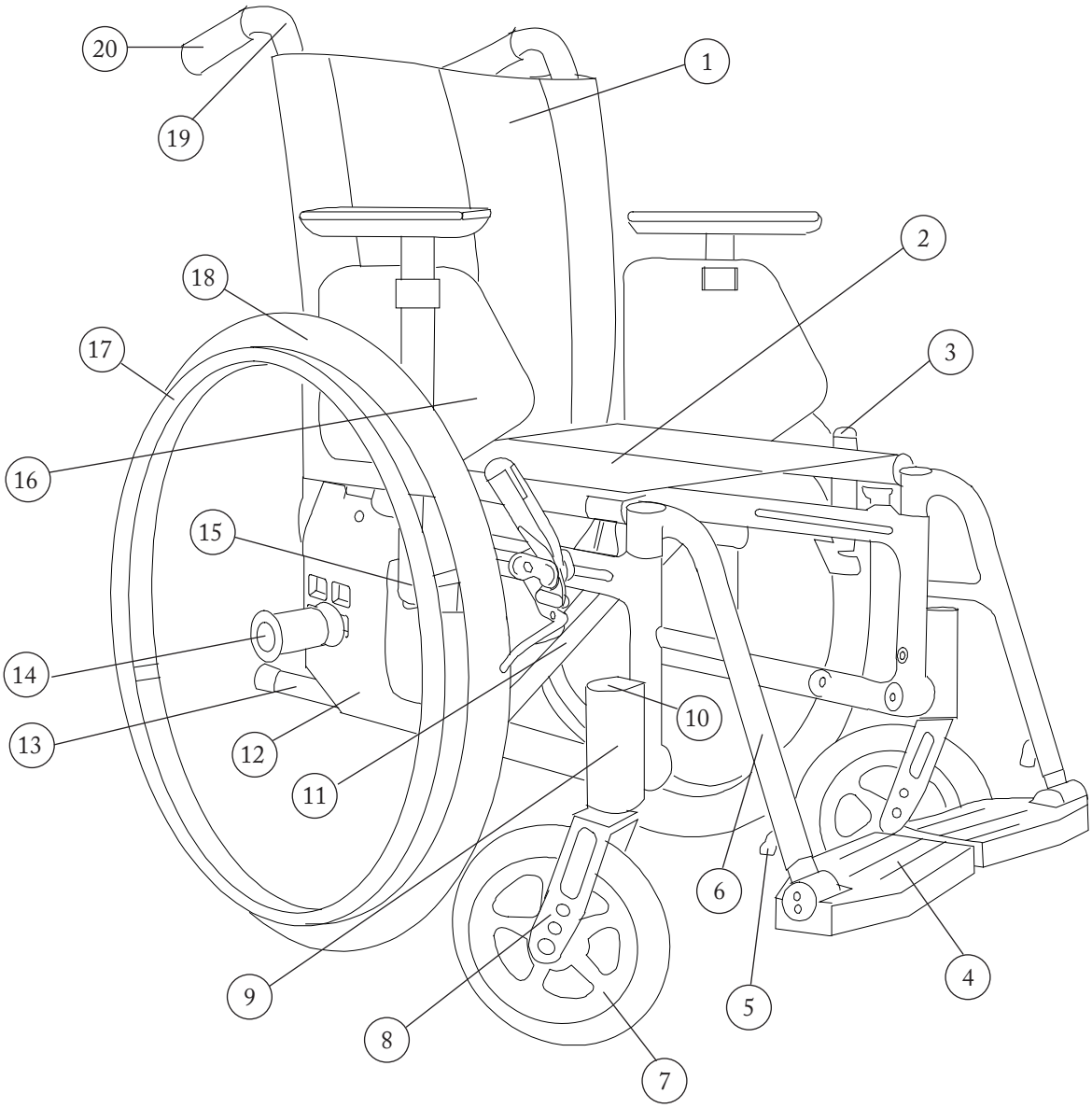
Etac recommends that:

- the user transfers to one of the seat's in the vehicle and wears the ehicle's three-point seat belt while travelling.
- a three-point seat belt is worn.
- positioning belt 25668 is used.
- a correctly adjusted headrest is used.
- the wheelchair is positioned facing forwards and is secured in accordance with the instructions provided by the supplier of the restraining device.
- the back of the wheelchair should be level with or above the user's shoulders when travelling in the vehicle.
- the parking brake is used and the anti-topple guard is lowered.

2:8 Warning'

- The wheelchair positioning belt is inadequate to prevent the user from being thrown out of the wheelchair in the event of sudden braking.
- The restraining device must not pass through the wheels or around the seat back tubes.
- Options/accessories that can be removed without tools, such as trays, must be removed and secured or placed where hey cannot fly around inside the vehicle in the event of a collision.
- If a wheelchair was present in a vehicle that has been involved in a collision it should be inspected at the local mobility centre or by Etac before it is used again.

3 PRODUCT DESCRIPTION TWIN

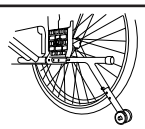
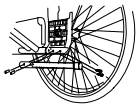
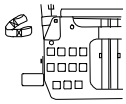
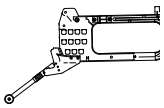
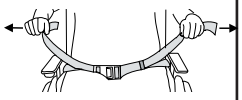


1	Backrest upholstery	11	Cross brace
2	Seat upholstery	12	Side frame
3	Brakes	13	Tilter
4	Footrest	14	Fixed hub, alternative - quick release
5	Footrest locking knob	15	Armrest attachment
6	Legrest	16	Armrest
7	Castor	17	Handrim
8	Front fork	18	Rear wheel
9	Front fork attachment	19	Backrest posts
10	Protective stopper	20	Push handles

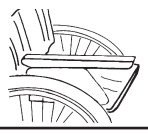
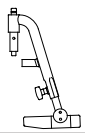
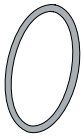
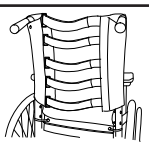
4 MODEL TWIN

Twin	Twin
Seat with adjustable height and angle Front seat height set at 47 cm 8" castor allround Short front fork Rear seat height set at 46 cm	**Seat with adjustable height and angle** Front seat height set at 42 cm 6" castor allround Short front fork Rear seat height set at 41 cm
24" rear wheel, fixed hubs, alt. quick release 1 3/8" low pressure tyre (with innertube) Aluminium handrims Camber 2°	**22" rear wheel, fixed hubs, alt. quick release** 1 3/8" low pressure tyre (with innertube) Aluminium handrims Camber 2°
Backrest adjustable in height and angle Standard backrest height 40 cm Standard backrest angle 0° (=90° between back and seat) Fixed push handles	**Backrest adjustable in height and angle** Standard backrest height 40 cm Standard backrest angle 0° (=90° between back and seat) Fixed push handles
Legrests detachable, swing-away Legrest with wide (standard) knee-anglee Footrest, flip-up, adjustable in height, depth and angle	**Legrests detachable, swing-away** Legrest with wide (standard) knee-anglee Footrest, flip-up, adjustable in height, depth and angle
Armrest. molded Length 26 cm, height adjustable	**Armrest. molded** Length 26 cm, height adjustable
Tilter	**Tilter**

5 ACCESSORIES

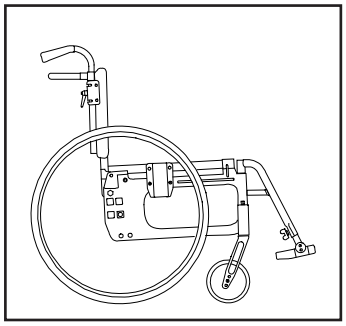
ANTI-TIP swing-up with built-in tilter, adjustable in height	
TILTER	
TRAY transparent, mounted on long armrests	
CUSHION dark grey plush and black velour, 56 cm long, can be cut to the desired depth, washable	
WALKING STICK HOLDER two part, elastic spring part fastens around the walking stick	
ANTI-TIP	
POSITIONING BELT in two parts, with snap lock, fastened to wheelchair frame	
SECUREMENT POINT	
TOOL KIT	

6 OPTIONS

ARMREST height adjustable, 36 cm long, one piece, black	
LOCKABLE LEGREST wide (standard) knee angle	
HANDRIMS stainless	
ADJUSTABLE BACKREST UPHOLSTERY	

7 SETTINGS: SEAT

7:1 FRONT SEAT HEIGHT TWIN



The front seat height is 47 cm and is dependant upon :
Castor 8"
Front Fork short
Front fork attachment's setting: adjustable in height and angle

Risk for tipping: always check the positioning of the anti-tip

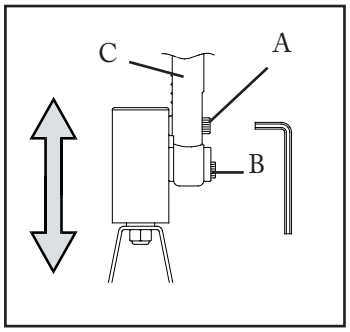
(!) See also para 14 *"Alternative seat height/angles"*

7:1:1 FRONT SEAT HEIGHT TWIN LOW

The front seat height is 42 cm and is dependant upon :
Castor 6"
Front fork short
front fork attachment's setting: adjustable in height and angle

(!) Also adjust the angle of the front fork attachment, see para 7:3

7:2 Adjusting the height of the front fork attachment



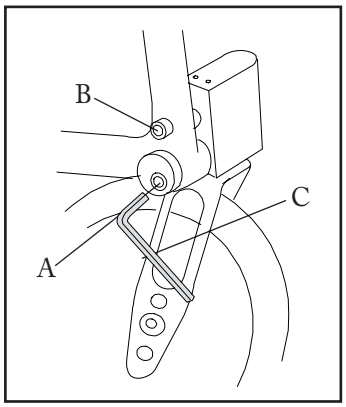
The height of the front fork can be adjusted 4 cm up or down by loosening the two attachment screws (A) 1-2 turns and changing the height of the attachment. See position marking (B) to obtain equal height on both sides. Check and adjust the angle of the attachment and tighten the screws.

Tool: 6 mm Allen key (a spirit level may be useful.)

Risk for tipping. Always check the positioning of the anti-tip.

(!) Also adjust the angle of the front fork attachment, see para 7:3

7:3 Adjusting the angle of the front fork attachment



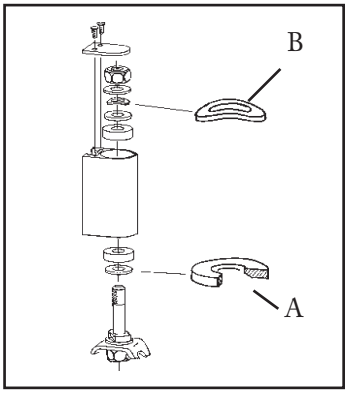
Loosen the lower screw (A) 1/4-1/2 a turn, and the upper screw (B) 1/4 turn. Insert a small Allen key in the hole (C) at the edge of the shaft and turn until the attachment is at 90° to the floor. Hold the shaft in place with the Allen key while the lower and upper screws are tightened.

Tools: 6 mm Allen key and a smaller Allen key. (A spirit-level may be useful.)

(!) It is a good idea to keep your eye on something vertical, e.g. a doorframe or table leg whilst setting the angle.

7 SETTINGS: SEAT

7:4 Changing the front fork

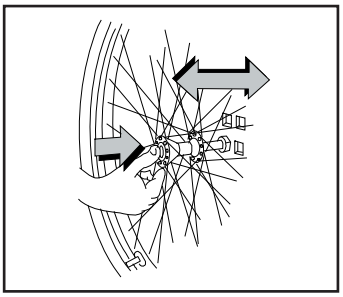


Unscrew the protective stopper from the front fork attachment in order to reach the retaining nut. Unscrew the nut and remove the front fork. Take the washer from the fork's axle and place it on the new fork (with the bevelled side (A) towards the fork). Insert the new fork into the attachment. It is important that the washers in the attachment (under the retaining nut) are in the correct order, with the spring washer (B) in the middle. Tighten the retaining nut until it locks, then loosen it 1/2 -1 turn. This should give the spring washer the correct tension which reduces the risk of the castor wobbling.

Tools: 19mm socket wrench and Phillips screwdriver

(!) Also adjust the angle of the front fork attachment, see para 7:3

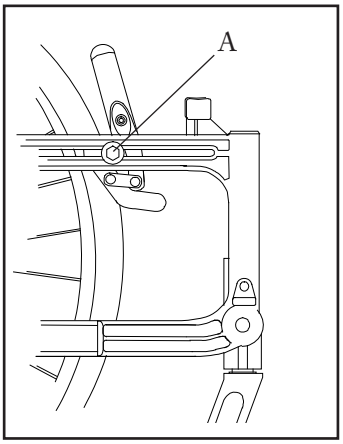
7:5 Rear wheel with quick release hub (option)



Press in the button on the wheel hub and slide the axle completely into the shaft. Release the button and ensure that it pops out completely, and that the wheel is securely mounted.

Always ensure that the wheel is securely mounted, and that the button pops out fully.

7:6 Adjusting the brakes



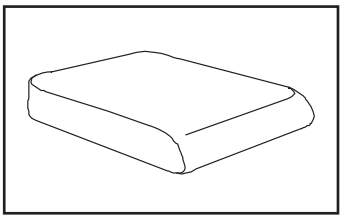
The brakes are variably adjustable.

- Loosen the nut (A) a couple of turns so that the brake block is about 20mm from the tyre when the brake is not applied.
- Make sure the brake sits securely in its track and tighten the nut. Test the brakes.

Tool: 10 mm spanner

The effectiveness of the brakes is dependant upon the amount of air in the tyres. The brakes are parking brakes only and should not be applied when the wheelchair is in motion.

7:7 Seat cushion (accessory)

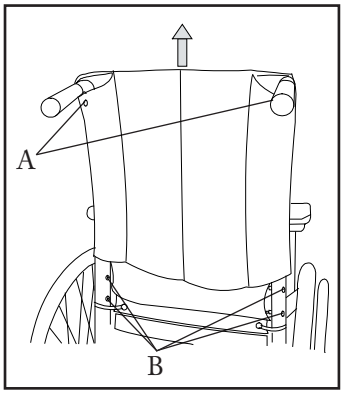


The cushion can be made even more comfortable by the use of a comfort wedge which rounds-off the front edge of the seat.
Remember: Push the cushion all the way in, with the rounded corners against the backrest.

The cushion is a standard model and is not suitable for users with sitting sores.

8 SETTINGS: BACKREST

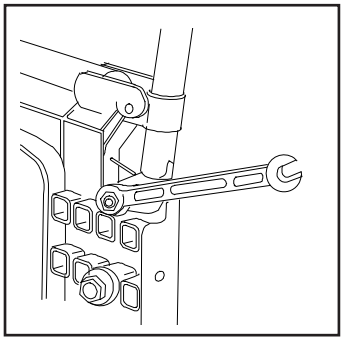
8:1 Backrest Height Twin



The backrest is adjustable to heights 40, 42.5, and 45 cm. Loosen the screws (A). Pull the upholstery up. Loosen the nuts (B) and install the desired height. Check that the height is the same on both sides.

Tools: 3mm Allen key and 8mm socket wrench

8:2 Backrest angle



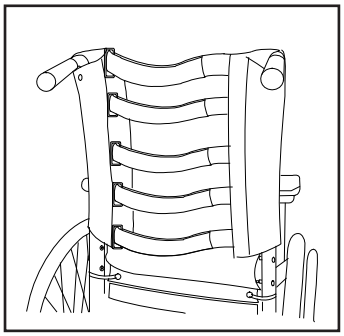
The backrest is infinitely variable between -0° and +6°
Loosen the nuts, install the desired angle and tighten the nuts again.

Tool: 13 mm ring spanner

(!) Check that the angle is the same on both sides by comparing the distance between the backrest posts and the armrests.

Risk for tipping: Always check the positioning of the anti-tip when changing the backrest angle.

8:3 Backrest upholstery (option)



The shape of the backrest upholstery is individually adjustable using the four Velcro straps and the cover.

- Allow the backrest cover ample space between the seat and the backrest, so that it is possible to “sit in” against the backrest.
- Loosen all the Velcro straps so that the user is sitting as far back in the seat as possible.
- Tighten the straps so that they follow the contour of the back, ensuring that they give support all the way down.

Risk for tipping: Always check the positioning of the anti-tip after adjusting the backrest upholstery.

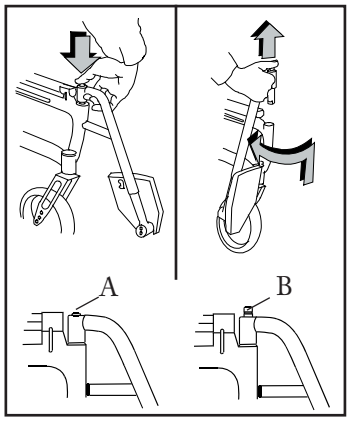
(!) Do not over-tighten the upper Velcro straps as this can prevent the cross-brace from unfolding properly, i.e the seat-frame tubes do not sit flush in the side-frames.

9 SETTINGS: LEGRESTS

Twin legrests are detachable and can be swung-away either to the side or under the seat. Lockable legrests are also available as well as two types of variable, angle-adjusted legrests with calf supports.

Never stand on the footrests as the chair may tip.
Never lift the chair by the legrests unless they are lockable.

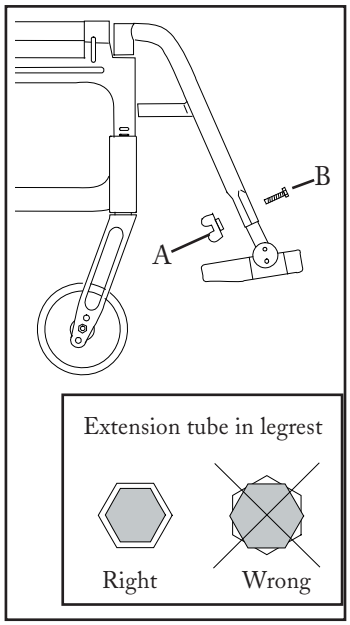
9:1 Lockable legrest (option)



Twin can be obtained with lockable legrests. The legrests are detachable and can be swung-away under the seat or to the side.
To remove the legrests, press the red button (A) and lift.
To fix the legrests, press the red button (B), put the legrest into place and release the button. The legrest is now locked (A).

When lifting a wheelchair without lockable legrests:
Swing the legrests under the seat, or remove them altogether, and lift by the frame (lower or upper frame bar).

9:2 Height, angle and depth of the footrest



Twin is supplied with flip-up footrests, adjustable in height, angle and depth.

Height: Loosen the locking handle (A) and remove completely. Remove the screw (B). Install the desired height and replace the handle and screw.

Note: Ensure that the screw is in the correct position (see illustration.) Tighten securely.

Angle: Loosen screws (C) slightly. Adjust to desired angle and tighten screws.

Tool: 5 mm Allen key.

Depth: The sides of the footrests have two different lengths. By exchanging the right for the left side, two different depths can be achieved.

For outdoor use the footrests should be 4-5 cm above ground level.
Never stand on the footrests as the chair may tip!

10 SETTINGS: OPERATING CONDITIONS

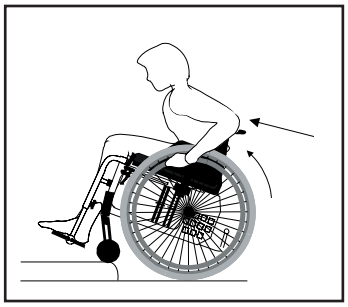
10:1 OPERATING CONDITIONS

Weight distribution is the decisive factor when it comes to operating conditions. It is in part dependant upon the user's weight, size and seating position, and in part on the fore/aft positioning of the rear wheels. The more weight that is placed over the rear wheels, the easier the wheelchair is to manoeuvre. If more weight is placed over the castors, the chair becomes heavier to drive.

Assistant: If the user is left alone in the wheelchair, ensure that the brakes are applied and that the antitips are swung down.

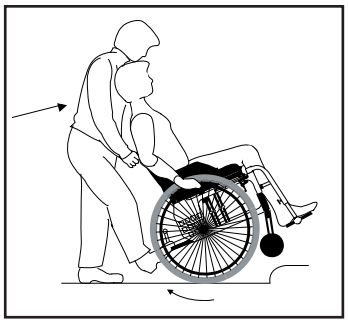
Parking: Increase the overall support base of the wheelchair by reversing for about 10cm, thereby ensuring that the castors swing forwards.

10:2 OPERATING CONDITIONS: Kerbs and raised thresholds:up



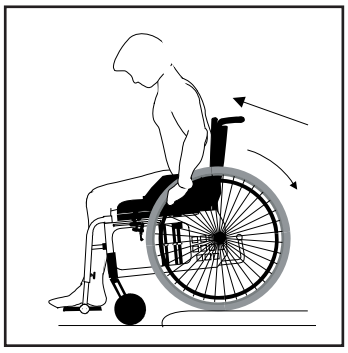
User alone, driving up forwards:
This method is recommended only for experienced wheelchair users
- Ensure that the ant-tippers are turned upwards.
- Drive forward to the edge of the kerb/threshold.
- Balance the wheelchair on its back wheels so that the castors lift off the ground high enough to clear the obstacle. Push forwards firmly on the handrims while at the same time leaning forwards with your upper body.

△ Be sure to turn the anti-tippers back to the down position.



Assistant,driving up forwards:
- Ensure that the anti-tippers are turned upwards.
- Tilt the wheelchair, with help from the tipper-bar, so that the castors are high enough to clear the obstacle.
- Lift by the push handles to help the rear wheels up over the obstacle.

△ Be sure to turn the anti-tippers back to the down position.



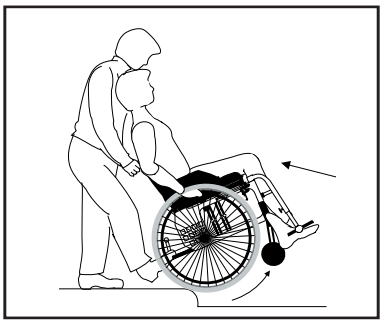
User alone,driving up backwards:
This method only works if the obstacle is low, relative to the installed height of the footrests.
- Ensure that the anti-tippers are turned upwards.
- Reverse the chair until the rear wheels meet the obstacle.
- Push back firmly and strongly on the handrims while at the same time leaning the upper body forwards.

△ Be sure to turn the anti-tippers back to the down position.

10 SETTINGS: OPERATING CONDITIONS

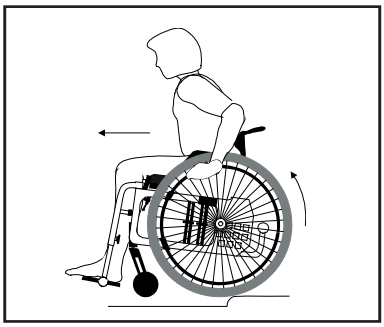
Assistant, driving up backwards:

- Reverse the chair until the rear wheels meet the obstacle.
- Tilt the chair with help from the tipper bar so that the castors are off the ground.
- Pull the wheelchair up and backwards, ensuring that the castors have cleared the obstacle before setting down the chair onto all four wheels.



⚠ Be sure to turn the anti-tippers back to the down position.

10:3 OPERATING CONDIITONS: Kerb: down

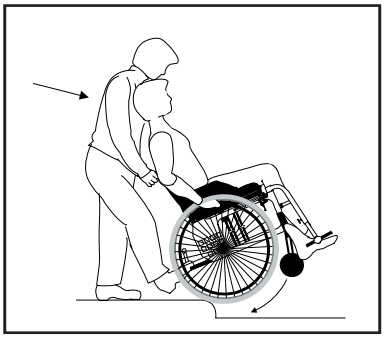


User alone, drive down forwards:

This method is recommended only for the experienced wheelchair user.

- Ensure that the anti-tippers is turned upwards.
- Drive forwards to the edge of the kerb.
- Balance the wheelchair on its back wheels, so that the castors lift off the ground.
- Drive carefully down the kerb and set down the castors again.

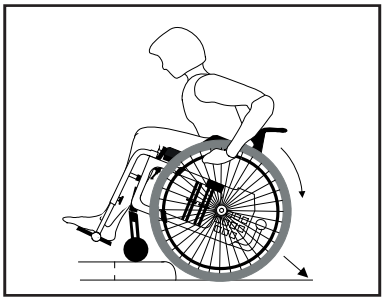
⚠ Be sure to turn the anti-tippers back to the down position



Assistant, drive down forwards:

- Ensure that the anti-tippers are turned upwards.
- Tilt the wheelchair, with help from the tipper, so that the castors clear the ground.
- Drive carefully down the kerb and set down the castors onto the ground again.

⚠ Be sure to turn the anti-tippers back to the down position.

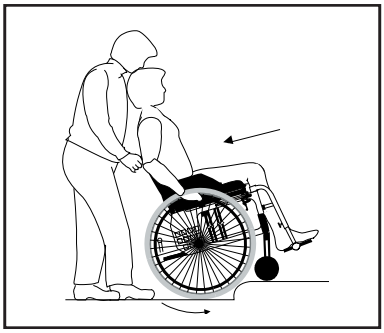


User alone, drive down backwards:

This method is not recommended for obstacles over 10cm in height.

- Ensure that the anti-tippers are turned upwards.
- Reverse the chair to the edge of the kerb.
- Reverse carefully down the kerb while at the same time.

⚠ There is a greater risk of tipping during this manoeuvre.
Be sure to turn the anti-tippers back to the down position.



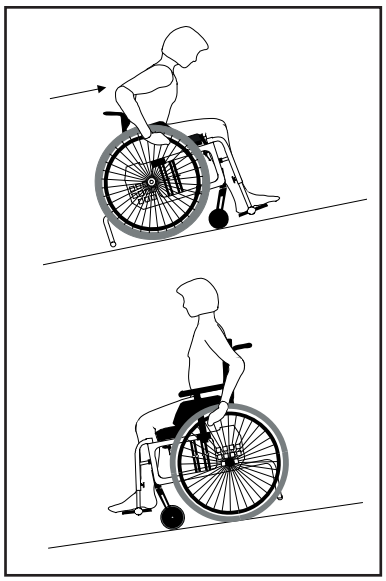
Assistent,drive down backwards:

- Ensure that the anti-tippers are turned upwards.
- Reverse the chair to the edge of the kerb.
- Reverse carefully down the kerb and continue backwards, keeping the castors raised until they have cleared the kerb.
- Set down the wheelchair onto all four wheels.

⚠ Be sure to turn the anti-tippers back to the down position.

10 SETTINGS: OPERATING CONDITIONS

10:4 OPERATING CONDITIONS : Angled surface.



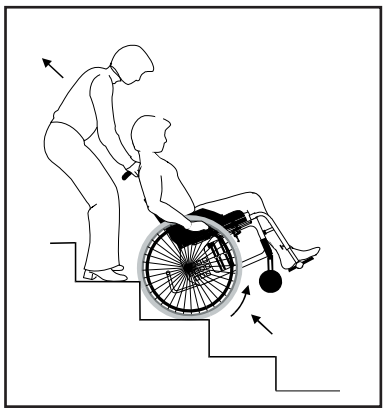
Please read carefully this important advice for driving up or downhill tominimise the risk of tipping.

(!) Never attempt a U-turn in the middle of a hill. Hold as straight a course as possible. It is better to ask for help than to take a risk on your own.

Uphill driving: Lean forwards to correct your centre of balance.

Downhill driving: Lean against the backrest to correct your centre of balance. Control your speed using the handrims; never attempt to apply the brakes when in motion!

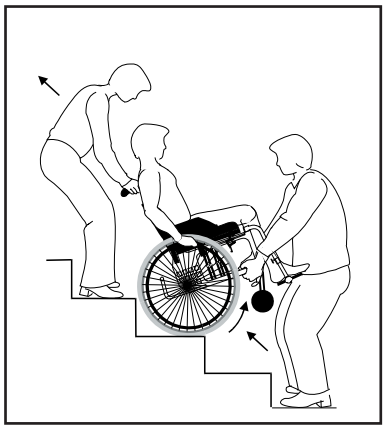
10:5 OPERATING CONDITIONS : Staircase up



△ Always ask for help.
Never use an escalator, even if you have an assistant.

With assistant, backwards:

- Turn the anti-tippers upwards and ensure that height adjustable push handles are securely fastened.
- Reverse the wheelchair to the first step.
- Tilt the chair onto the rear wheels, using the tipper bar to help.
- Pull the wheelchair carefully upwards, one step at a time, keeping it balanced on the rear wheels.
- When the last step has been cleared, continue backwards so that the castors can be set down into contact with the ground.



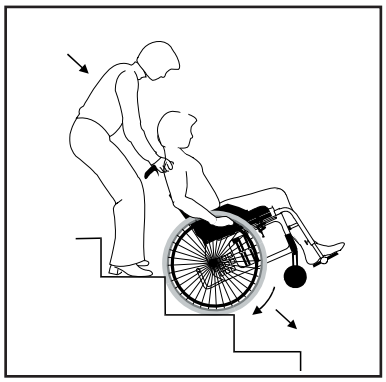
△ Be sure to turn the anti-tippers back to the down position.

(!) If there are two assistants, one can help by lifting from in front using lockable legrests, or by removing/swinging away standard legrests and lifting by the frame.

(!) Assistants should remember while lifting to keep their backs as straight as possible.

10 SETTINGS: OPERATING CONDITIONS

10:6 OPERATING CONDITIONS Staircase: down



Always ask for help.
Never use an escalator, even if you have an assistant.

With assistant, forwards:
- Turn the anti-tippers upwards.
- Drive forwards to the first step and tilt the wheelchair back onto the rear wheels, using the tipper if necessary.
- Descend carefully, one step at a time, keeping the wheelchair balanced on its back wheels.
- After the last step set down the wheelchair onto all four wheels.

△ Be sure to turn the anti-tippers back to the down position.

(!) If there are two assistants, one can help by lifting from in front using lockable legrests, or by removing/swinging away standard legrests and lifting by the frame.

(!) Assistants should remember while lifting to keep their backs as straight as possible.

10:7 OPERATING CONDITIONS Transferring into/out of the wheelchair

The method for transferring a user into/out of a wheelchair should be practised together with trained personnel. This paragraph should be used only in an advisory capacity.

With or without an assistant, sideways:
Before transference:
- Reverse the wheelchair 5-10 cm so that the castors are turned fully forwards. The wheelchair should be placed as near to the object of transference as possible.
- Apply the brakes, remove or swing up armrest/side guard and legrest on the side you intend to move across.

With or without helper, forwards:
Before transference:
- Reverse the wheelchair 5-10cm so that the castors are turned fully forwards. The wheelchair should be placed as near to the object of transference as possible.
- Apply the brakes and swing the legrests in under the seat.

△ Never stand on the footrests as the chair may tip!

(!) Assistants should remember while lifting to keep their backs as straight as possible.

10 SETTINGS: OPERATING CONDITIONS

Operating a wheelchair is a dynamic activity. Therefore, operating conditions are every bit as important to take into consideration as seat position. The wheelchair should be as easy to handle as possible. It must be adapted individually to the user's capacities.

Weight distribution is the determining factor. The more weight there is on the castors, the harder the wheelchair is to manoeuvre. Weight distribution is determined both by the user's size, weight and position, and the fore/aft positioning of the back wheels. The more weight that is placed over the back wheels, the easier the chair is to handle.

Twin comes as standard with a 2° camber. This means that the wheels are a little closer together up by the seat and backrest, and a little wider apart at floor level. The advantages of this are that the wheelchair

-Turns more easily
-Holds a steady course
-Has a broader support base
-Allows the user to keep his arms closer to his body when moving forwards - which gives more strength to each push.

10:8 Centre of Balance

The centre of balance can be adjusted by changing the position of the rear wheels.

- Move the axle shaft forwards/backwards

△ Remember to adjust the brakes! See para 7:6

Tools: 24 mm socket wrench (10 mm spanner)

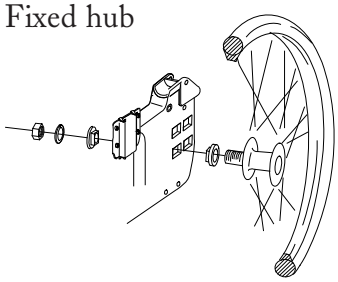
When the position of the rear wheels is moved forwards the wheelchair is easier to manoeuvre, but the risk of tipping over backwards increases.

(!) The centre of balance is also changed when the seat angle and/or backrest angle is altered.

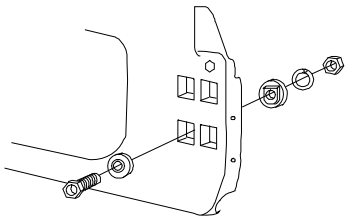
△ We recommend the use of anti-tippers.

△ Ensure that rear wheels with quick release hubs are mounted securely

Fixed hub



Quick release hub



10 SETTINGS: OPERATING CONDITIONS

10:9 HANDRIMS

Twin is delivered with aluminium or stainless steel handrims as standard. The way in which the user is able to grip the handrim is influenced both by the type of handrim chosen, and its distance from the wheel. Friction-coated, cellular rubber and plastic-coated handrims are available as options.

△ **The optional handrims give a better grip, but also increase friction. It is therefore important to remember that when stopping suddenly, friction burns (e.g. blisters) may occur.**

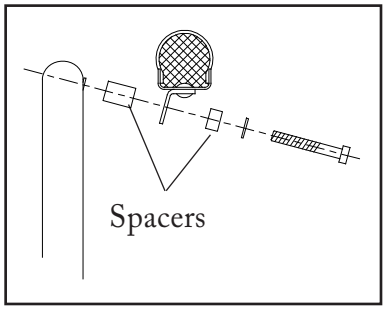
△ **Remember that when passing through a narrow space you may pinch your fingers between handrim and wall. Also be careful that your fingers do not slip into the spokes.**

△ **If there is a risk that the user's fingers will catch in the spokes we recommend the use of spoke-guards.**

10:10 Adjusting the distance of the handrim

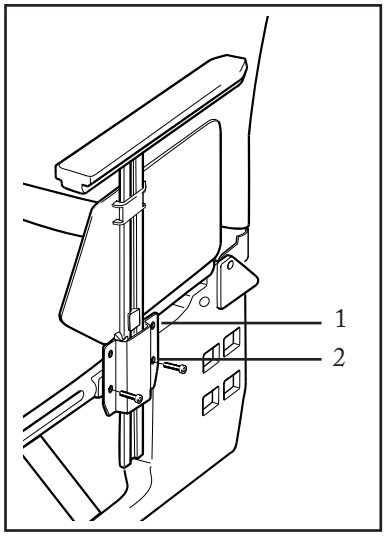
Aluminium/stainless steel handrims: the distance between wheel and handrim can be adjusted by adding or removing spacers.

Tool: 4 mm Allen key.



11 ASSEMBLY INSTRUCTIONS: ACCESSORIES

11:1 Armrest, height adjustment



The detachable armrests comes in two varieties, short and long.
The armrest attachment can be fitted in two different heights.
In position 1 the armrest is adjustable between 19-26 cm, and in position 2 (standard) between 24-31 cm, with 1 cm intervals.

Tools: 10 mm spanner, 5 mm Allen key

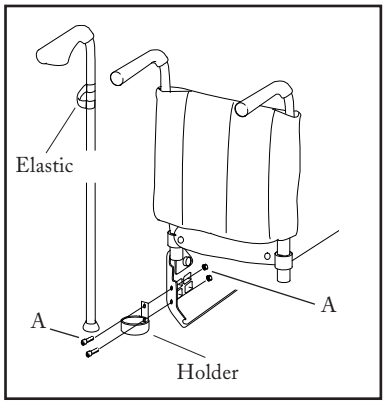
The locking claque is used both to install the height and to fix the side guard to the stem.

- Loosen the screw that fastens the claque
- Slide the guard up or down to the desired height.
- Fasten the screw again.

Tool: 3 mm Allen key.

Never use the armrests to lift the wheelchair.

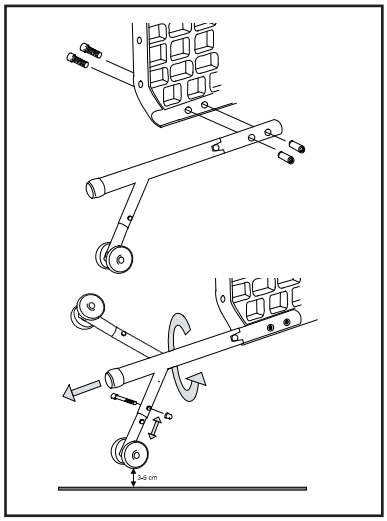
11:2 Walking stick holder, mounting



- Mount the holder on the back of the wheelmount with the screws and nuts supplied (A)
- Thread the elastic band 'double' around the cane to make a loop (see illus). The tip of the cane may have to be removed to allow you to attach the elastic.
- Place the cane in the holder and stretch the elastic loop over the push handle.

Tools: 4 mm Allen key and 10 mm spanner.

11:3 Anti-tip stabilisers, mounting



The anti-tip consists of two parts:

- The attachment bar is mounted under the wheel mount (see illus)
- The extension bar with the stabiliser wheel is fixed to the anti-tip bar at the desired height with screws and nuts.

To allow you to negotiate thresholds and the edges of thick carpets, a distance of 3-5 cm from the floor to the stabiliser bar is recommended.

Tools: 4 mm Allen key, 8 mm spanner.

When adjusting the seat height, centre of balance or backrest angle you must check the position and performance of the anti-tip stabilisers. To swing up the anti-tip, pull out and swing round.

12 CARE AND MAINTENANCE

UPHOLSTERY

The upholstery is made of two-ply polyester or coated fabric. The seat upholstery is fastened lengthways to the seat frame and can easily be removed from the frame by unscrewing the end caps. The backrest upholstery is removed by loosening the screws (1 on each side) on the rear of the backpost rests and pulling the upholstery upwards.

The seat and backrest upholstery can be machine washed at 40°C

REAR WHEEL/CASTOR FRONT FORK ATTACHMENT

Tyre/inner tube:	Check the tyre pressure (see side of tyre) at least once a month; also check the tread.
Spokes:	Loose spokes can lead to wheel wobble. Consult a cycle dealer or your wheelchair supplier if you need to adjust the spokes.
Wheel axles:	The axles should be kept free from dirt. Clean as necessary.
Ball bearings:	The ball bearings require no maintenance.
Handrims:	If a handrim should be damaged in such a way that could lead to hand injury, it should be replaced.
Front fork attachment:	To achieve the best operating conditions, the attachments should be installed at the correct angle. Check also that the front forks are tightened according to instructions, see para 7:4.

BRAKES

The function of the brakes are dependant upon tyre pressure. Encrusted dirt can have a negative effect on the brake mechanism. The brakes should be checked at least once a month. In the event of adjustments, see para 12:10.

WASHING THE FRAME

Both for your own comfort and the longevity of the chair, it is important to keep the wheelchair clean. Twin is equipped with a drainage hole which ensures that it is easy to wash and keep clean.
Wash the chair with car shampoo or washing-up liquid. If the chair is particularly dirty, a grease remover can be used.

TOUCH-UP PAINT

Small bottles of touch-up paint, to repair scratches and chips,are available in all Twin frame colours.

MISCELLANEOUS

If there is a fault on your wheelchair you should contact your dealer at once. Defective chairs not be used. If your chair needs reconditioning or repair, only original Etac parts, or parts of equal quality, as specified in our diagrams and manuals, should be used. Etac will not be held responsible for damage or injury caused by use of no-original parts.
(!) If necessary, lubricate moving parts/joints with cycle oil or similar.

12 CARE AND MAINTENANCE

TORUBLECHOOTING CHART

Problem*	Solution
Wheelchair will not hod a straight course	- Inflate the tyres - Check the front fork attachments angle - Check that the front fork attachments are mounted at the same height - Rear wheel mountings are incorrectly fitted - The user is distributing weight unevenly - More strength being used on one side than the other when propellning the chair
Wheelchair feels "heavy" to propel	- Inflate the tyres - Rear wheel mountings are incorrectly fitted - Ensure that the castor axles are free from dirt etc. - To much weight over the castors. Adjust the centre of balance
Wheelchair feels "heavy" to turn	- Inflate the tyres - Check that the front fork attachments are not to tightly fastened - Adjust the angle of the front fork attachments - Ensure that the castor axles are free from dirt etc. - To much weight over the castors. Adjust the centre of balance
Brakes not effective	- Inflate the tyres - Adjust the distance between brake and tyre
Rear wheel "loose"	- Ensure that the axle-shaft washer is in place - Adjust the length of the axle shaft
Rear wheel hard to remove/ replace	- Clean and lubricate quick release with cycle oil or similar. - Adjust the length of the axle shaft
Castor "wobbles"	- Front forks are not tightly fitted - Check that the front fork attachments are mounted at the same height - Adjust the angle of the front fork attachment - To much weight over the castors. Adjust the centre of balance
Wheelchair is hard to fold/unfold	- Upholstery is to tight - Clean and lubricate the Cross-brace under the seat
Wheelchair feels "awkward"	- Inflate the tyres - Check that all screws, nuts and bolts are properly fastened

* The user may experience several of these problems in a wheelchair that is incorrectly adjusted or is being incorrectly used.
(!) If necessary, lubricate moving parts/joints with cycle oil or similar.

13 TESTS AND GUARANTEES

Twin is tested and approved for use indoors and out and is CE certified. Max user weight is 125 kg.

Handicap Institute tests both functionally and technically. Test methods conform to ISO's norms, standard 7176.

CE certifying The product has passed all tests and met all criteria set by specific productgroup European standards.

A proof that the product meets national and EU,s MDD (**M**edical **D**evice **D**irective) standards.

Gives customers the chance to choose the best possible product by comparing the test data..

Guarantee Frame: 5 yrs against material and/or constructional defects
Back/arm/footrest: 1 yr against material and/or constructional defects.
Upholstery,wheels, spokes: No guarantee.

Specially adjusted chairs are those which are altered outside of the norms and standards contained in the manual.

Wheelchairs specially adjusted by a customer cannot retain a CE certificate. Etac's guarantee no longer applies. If in the least doubt about the validity of adjustments, please contact Etac for advice.

Assemblage of Twin with another product not manufactured by Etac:

Generally ensures loss of CE certificate by both products.
Etac has contracts with certain companies whose products are approved in combination with Twin.
These can be combined and still retain their CE certificates from the manufacturer.
Please contact Etac for current information.

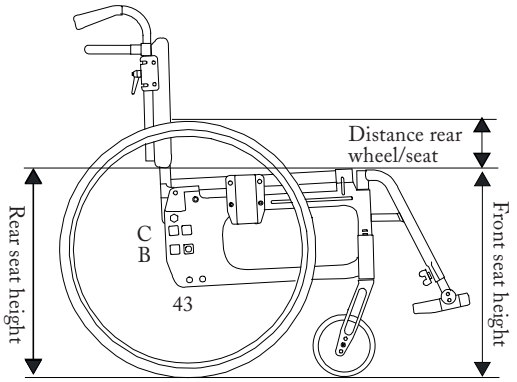
14 ALTERNATIVE SEATHEIGHTS/ANGLES

REAR SEAT HEIGHT TABLE
(Given measurements can vary +/- 1 cm depending upon tyre type and seat angle)

Twin

	Rear wheel pos	Rear seat height Seat angle 3°	Distance rear wheel - seat
24"	B 3-4	46 cm	14,5 cm

Front seat is adjustable between 45-49 cm.



Twin låg

	Rear wheel pos	Rear seat height Seat angle 3°	Distance rear wheel - seat
22"	C 3-4	41 cm	16,5 cm

Front seat height is adjustable between 40-44 cm.

15 WEIGHT AND DIMENSIONS

STANDARD MODELS

Twin

Chair type	Art.nr Twin	Seat depth	Seat height front	Seat height rear	Backrest height	Total width	Transport width	Weight with rear wheels
35 cm	13160101	42 cm	47 cm	46 cm	40-45 cm	57 cm	*22cm/32	16,7 kg
40 cm	13160105	42 cm	47 cm	46 cm	40-45 cm	62 cm	*22cm/32	16,9 kg
45 cm	13160109	42 cm	47 cm	46 cm	40-45 cm	67 cm	*22cm/32	17,1 kg
50 cm	13160111	42 cm	47 cm	46 cm	40-45 cm	72 cm	*22cm/32	17,3 kg

Twin low

Chair type	Art.nr Twin low	Seat depth	Seat height front	Seat height rear	Backrest height	Total width	Transport width	Weight with rear wheels
35 cm	13160201	42 cm	47 cm	46 cm	40-45 cm	57 cm	*22cm/32	16,6 kg
40 cm	13160205	42 cm	47 cm	46 cm	40-45 cm	62 cm	*22cm/32	16,8 kg
45 cm	13160209	42 cm	47 cm	46 cm	40-45 cm	67 cm	*22cm/32	17,0 kg
50 cm	13160211	42 cm	47 cm	46 cm	40-45 cm	72 cm	*22cm/32	17,2 kg

Colour choice for frame: 30= blue texture, 34= plum texture

Functional seat depth from 47-48 cm. Given measurements can vary +/- 1 cm

* Without rear wheels